MULLER, C.; ENGLER, V.

Analysis of morbidity combined with work incapacity and total disability in foundries in the machine industry. Bratisl. lek listy 44 no.6:321-335 '64.

1. Katedra zdravotnictvi lekarske fakulty hygienicke UK [Karlova Universita] v Praze (vedouci prof. MUDr. Frantisek Blaha).

ENGLER,V.; MULLER,C.

Traumatism in the Czechoslovakian SSR during the period 1952-1962. Bratisl. lek. listy 44 no.10:577-597 30 N '64

1. Kafedra zdravotnictvi lekarske fakulty hygienicke University Karlovy v Praze (vedouci prof. MUDr. F. Hlaha).

CZECHOSLOVAKIA

ENGLER, V.; HAUS, A.

Chair of Health and Department of Prevention of Occupation Disease of the Medical Faculty of Hygiene of Charles University (Katedra zdravotnictvi a oddeleni prevence nemoc i z povolani lekarske fakulty hygienicke KU), Prague (for both)

Prague, Ceskoslovenska Hygiene, No 7, 1964, pp429-431

"Comments On the Control of Morbidity by the Members of the Hygienic and Epidemiologic Service."

ENGLERT, J.

TECHNOLOGY

Periodical: MAGYAR TEXTILTECHNIKA Vol. 11, no. 1, Jan. 1959.

ENGLERT, J. Experiences with the 3 on 4-type Hungarian-made spring-loaded drawing frame used in large scale production. p. 11.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5, May 1959, Unclass.

ENGLER, I.; GRUNERT, V.

A contribution to cholecystitis in childhood. Cesk. pediat. 16 no.7/8: 639-642 Jl-Ag '61.

1. Z kliniky detskej a mozgovej chirurgie LU v Bratislave. Prednosta kliniky doc. MUDr. Josef Zucha.

(CHOLECYSTITIS in inf & child)

ENGLER,V.; NAUS,A.

Analysis of morbidity in the foundry of a large engineering plant. Prac.lek. 15 no.9:374-379 N'63.

1. Katedra zdravotnictvi lekarske fakulty hygienicke KU v Praze (vedouci: prof. dr. F.Hlaha); Oddeleni prevence nemoci z povolani lekarske fakulty hygienicke KU v Praze (vedouci: MUDr. A.Naus., CSc.).

ENGLESMAN, J.

Problem of measuring a shoe last in Hungary. Tr. from the Hungarian. p. 21.

KOZARSTVI, Praha, Czechoslovakia, Vol. 9, no. 1, Jan. 1959

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 10, Oct. 1959
Uncl.

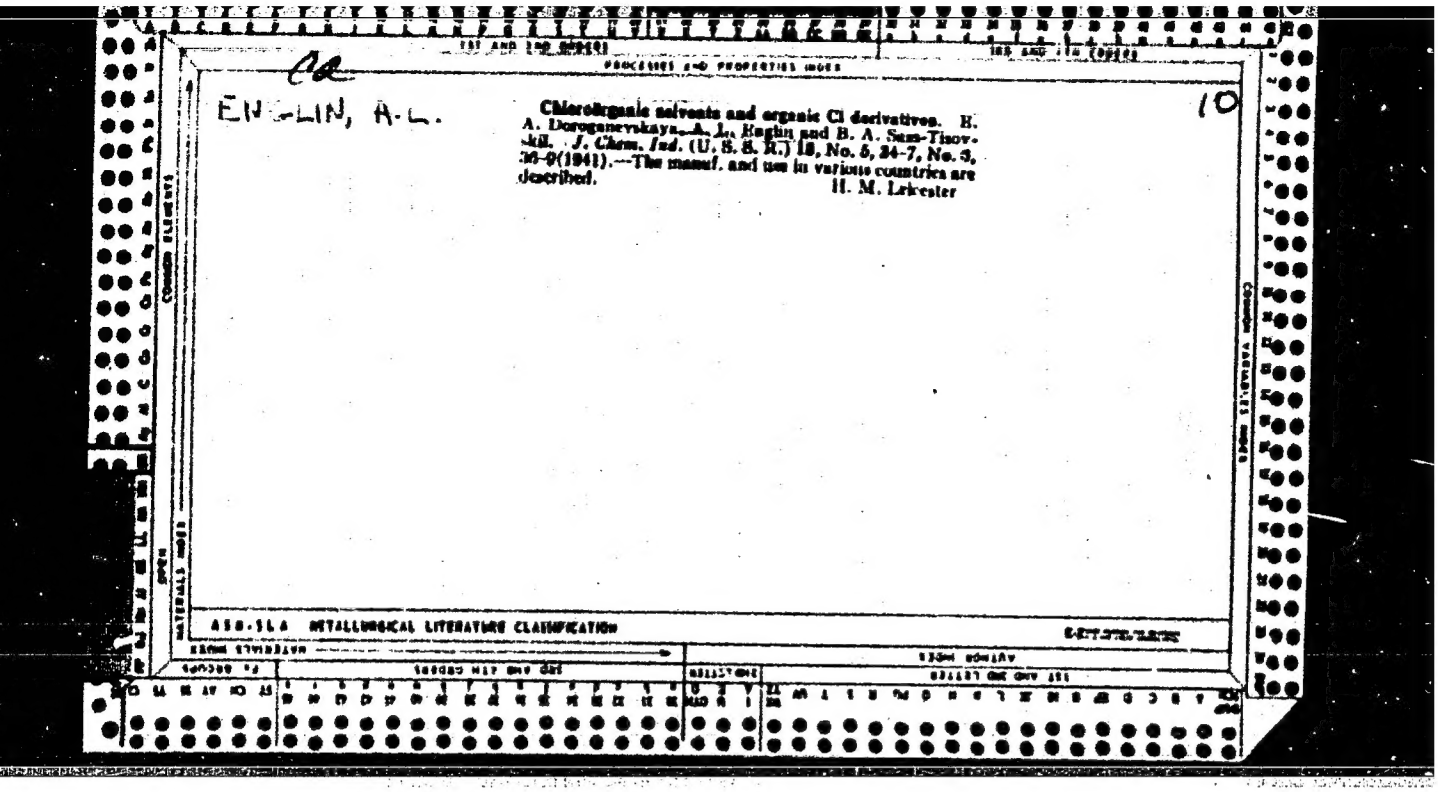
ENGLICHT, W.

AGRICULTURE

periodicals: NOWE ROLNICTWO Vol. 8, no. 1, Jan. 1959

ENGLICHT, W. Economic problems in the works of scientific institutes and practical agriculture. p. 15.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5
May 1959, Unclass.



ENGLIN, A.L.

10

Chlorinated solvents and organic Cl derivatives. B. A. Dorogonevskaya, A. L. Englin and B. A. Sam-Tisovskii. *J. Chem. Ind.* (U. S. S. R.) 18, No. 5, 34-7, No. 9, 36-9(1941).—The manuf. and use in various countries are described.

H. M. Leicester

AUTHORS: Motsarev, G. V., Englin, A. L., Yakubovich, A. Ya., Uspenskaya, I. N. Ivanova, N. G.

79-28-5-51/69

TITLE: On the Catalytic Chlorination of

dependence on the mol ratio of the methylchlorosilane and chlorine, the whole range of chlorine derivatives CH_3SiCl_3, $(CH_3)_2SiCl_2$ and $(CH_3)_3SiCl$ with the chlorine atoms in the methyl groups can be obtained as is the case in the photochlorination of the methylchlorosilanes. As it must be taken into account that the chlorine of the methyl group of silane increases its further substitution velocity in chlorination, the catalytic liquid-phase chlorination for the purpose of the synthesis of the monochlorine derivatives must take place in such a way that a sufficient amount of the methylchlorosilane which had not entered reaction remains. Thus the reaction liquid-phase chlorination of methylchlorosilanes- CH_3SiCl_3, $(CH_3)_2SiCl_2$ and $(CH_3)_3SiCl$ was investigated in the presence of azodinitrile of isobutyric acid and it was found that in this case, dependent on the mol ratio of silane and chlorine, a whole number of chlorine derivatives containing chlorine in the methyl group can be obtained.

On the Catalytic Chlorination of the Methylchlorosilanes in the Liquid-Phase

79-28-5-51/69

There are 1 table and 7 references, 4 of which are Soviet.

SUBMITTED: September 8, 1957

Card 3/3

SERGEYEV, Ye.V., kand.tekhn.nauk; ENGLIN, A.L., kand.tekhn.nauk; YEGOROVA, V.N.

Production of monochloroacetic acid. Khim. prom. no.10:41-45 O '61. (MIRA 15:2)

(Acetic acid) (Herbicides)

S/661/61/000/006/022/081
D205/D302

AUTHORS: Motsarov, G. V., Englin, A. L. and Yakubovich, A. Ya.

TITLE: Liquid-phase chlorination of aliphatic and fatty-aromatic silanes in the presence of azo-bis-iso-butylnitrile

SOURCE: Khimiya i prakticheskoye primeneniye kremneorganicheskikh soyedineniy; trudy konferentsii, no. 6, Doklady, diskussii resheniye. II Vses. Konfer. po khimii i prakt. prim. kremneorg. soyed., Len. 1958. Leningrad. Izd-vo AN SSSR, 1961, 110-112

TEXT: Recently, dimethyl dichlorosilane was chlorinated in the presence of azo-bis-iso-butylnitrile yielding 90% of $(CH_3).(CCl_3)SiCl_2$ and $(CCl_3).(CHCl_2)SiCl_2$. These are of interest as starting monomers for preparing special silicon rubbers. For preparation of the hexachloro-derivative other conditions are necessary. The synthesis of $(C_6H_5).(CCl_3).SiCl_2$ was achieved by the chlorination of

Card 1/2

$(C_6H_5)(CH_3)SiCl_2$. Ye. P. Mikheyev (Moscow), S. A. Golubtsov (Moscow), V. F. Mironov (IOKh, AN SSSR, Moscow) and V. S. Chugunov (IKhS AN SSSR, Leningrad) took part in the discussion concerned with comparison of the two methods of chlorination of dimethyl dichlorosilane, the one using azo-bis-iso-butylnitrile as the initiatior and the other employing light. Ye. P. Mikheyev considered light initiation to be usually more effective. G. V. Motsarev disagreed.

ACC NR: AP7000967 (A) SOURCE CODE: UR/0416/66/000/012/0079/0082

AUTHOR: Englin, B. (Doctor of technical sciences; Engineer; Lieutenant colonel); Mikulin, Yu. (Candidate of technical sciences; Engineer; Captain of 2d rank)

ORG: none

TITLE: Starting diesel engines at low temperatures

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 12, 1966, 79-82

TOPIC TAGS: diesel engine, diesel fuel, liquid fuel, engine starter system, low temperature lubricant, lubricant additive/Kholod D 40 ~~starting fluid~~ liquid fuel

ABSTRACT: Investigations carried out by scientific research institutes and analyses of foreign and domestic experimental data have revealed that one of the most effective means of facilitating the starting of diesel engines at low temperatures consists in the use of readily flammable starting fluids. Experiments made with the Kholod-D-40 starting fluid on various types of diesel engines were conducted under actual operating conditions in the far north after an exposure to temperatures down to minus 38°C for 10—100 hr. The components of Kholod-D-40 starting fluid and its use are discussed. The use of standard lubricants (at up to minus 20—25°C) and thickened lubricants with a 15—20% additive of diesel oil (at up to minus 35—40°C) is discussed, and the starting procedure is described. Tabulated values show the average maximum abrasions of cylinder bushings for various diesel engines and lubri-

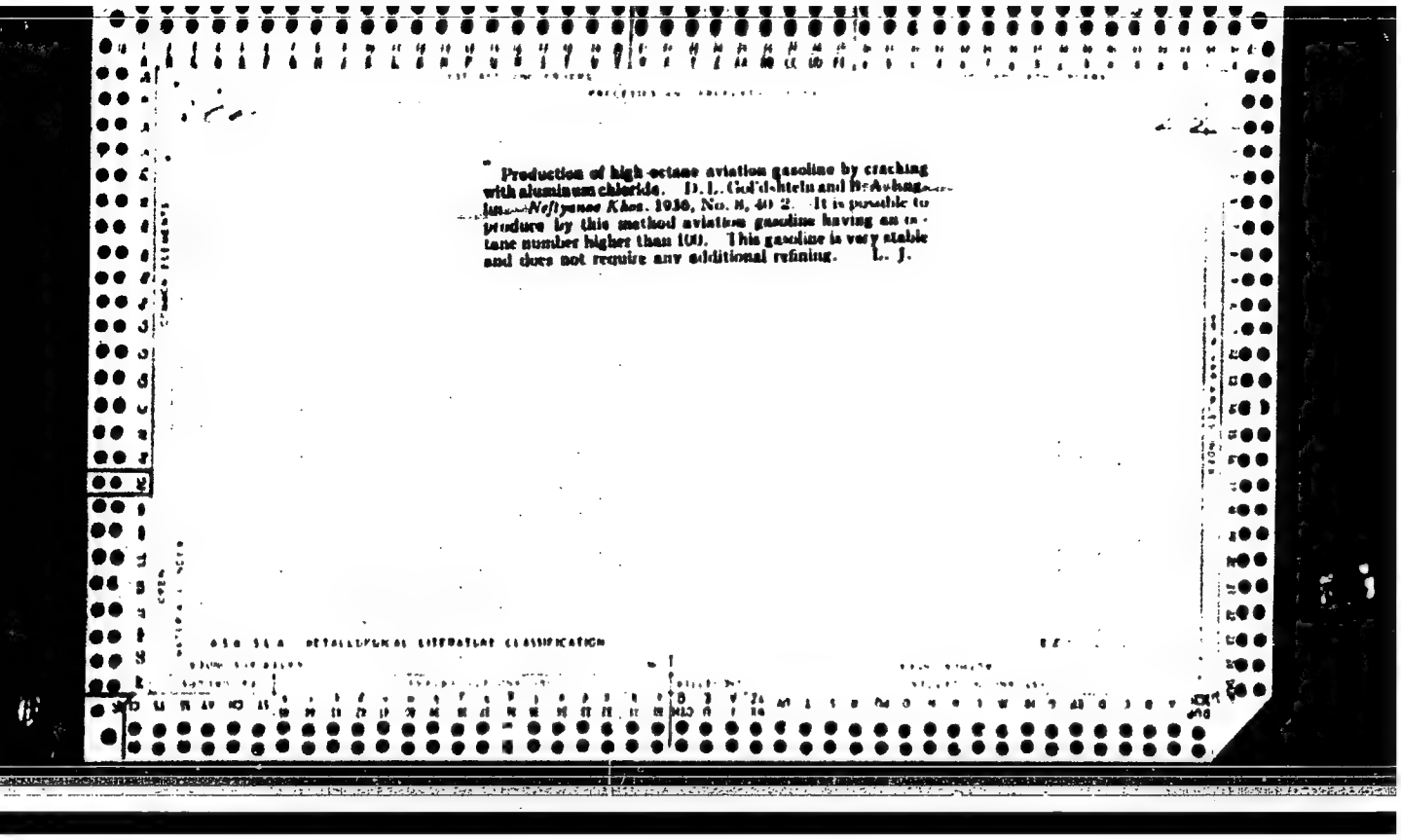
Card 1/2 UDC: none

ACC NR: AP7000967

cants. The described starting method was proved best over a 3-year period of operation in the far north. Orig. art. has: 1 table. [GE]

SUB CODE: 21, 11/ SUBM DATE: none/

Card 2/2

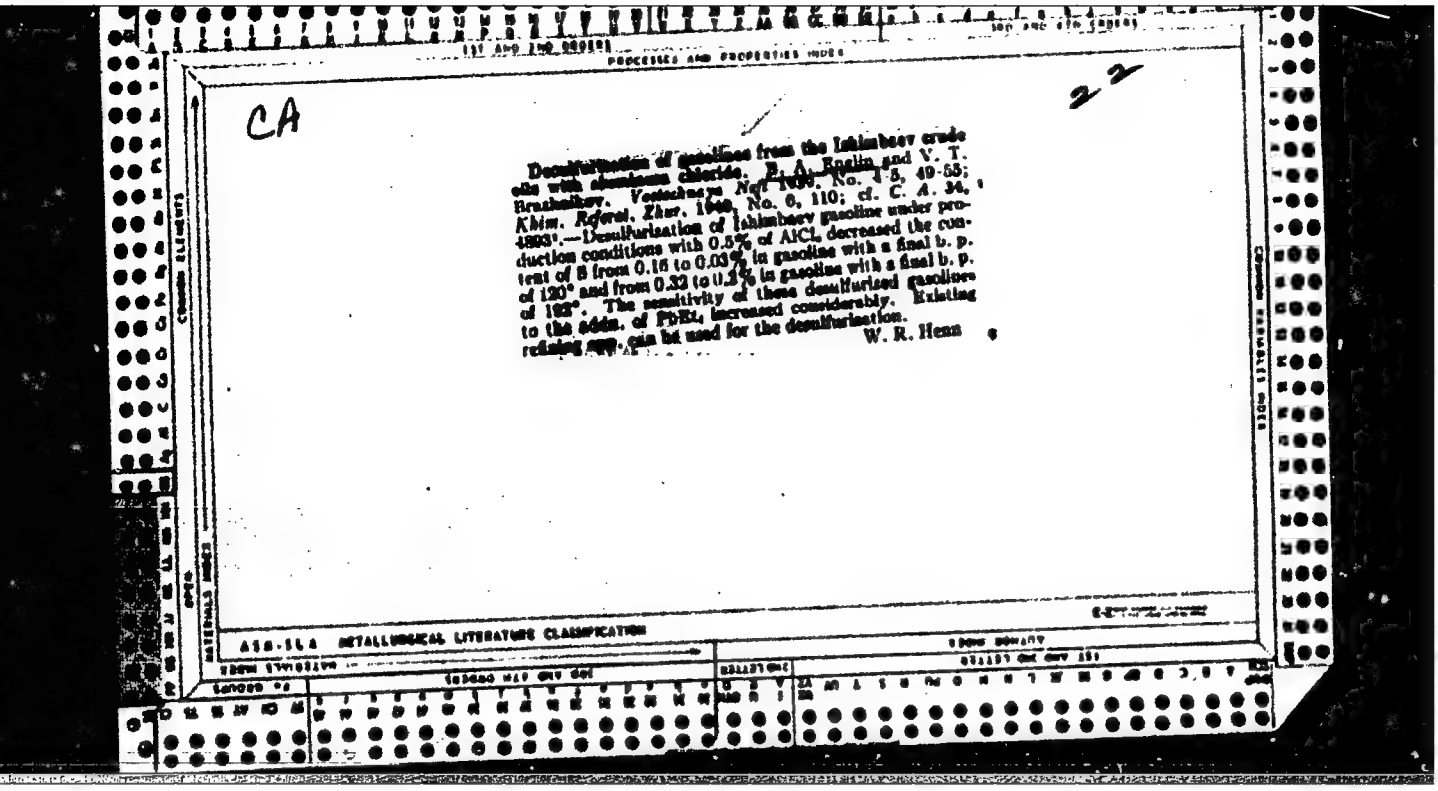


Production of high-octane aviation gasoline by cracking with aluminum chloride. D. L. Goldshtein and B. Avbelman. *Neftyanoe Khoz.* 1930, No. 8, 40-2. It is possible to produce by this method aviation gasoline having an octane number higher than 100. This gasoline is very stable and does not require any additional refining. L. J.

Desulfurization of Ishimbayévo gasoline by acidification of the hypochlorite used. S. I. Belko, B. A. Englin and N. A. Chuvilaeva. *Neftyanoe Khoz.* 18, No. [illegible] [illegible] ([illegible]). By strong chlorination of emulsions of motor spirit with alk. liquors, the S content can be reduced to 0.02%. The product thus obtained, however, is strongly chlorinated (3-10% Cl); in order to reduce S to 0.17-0.21%, the hypochlorite liquor (contg. 8-12 g. per l. of available Cl) should be progressively neutralized to a slightly acid reaction. The product obtained under these conditions contains 0.1-0.13% S (proportion of hypochlorite liquor to gasoline being 2:1). By increasing the available Cl content of the liquor to 18 g. per l. and reducing the quantity of liquor by 50%, gasoline is obtained contg. 0.11% Cl and 0.105% S. By a supplementary alk. distn. practically the whole of the S and Cl can be removed from the desulfurized product.

A. Papineau-Couture

METALLURGICAL LITERATURE CLASSIFICATION



CA

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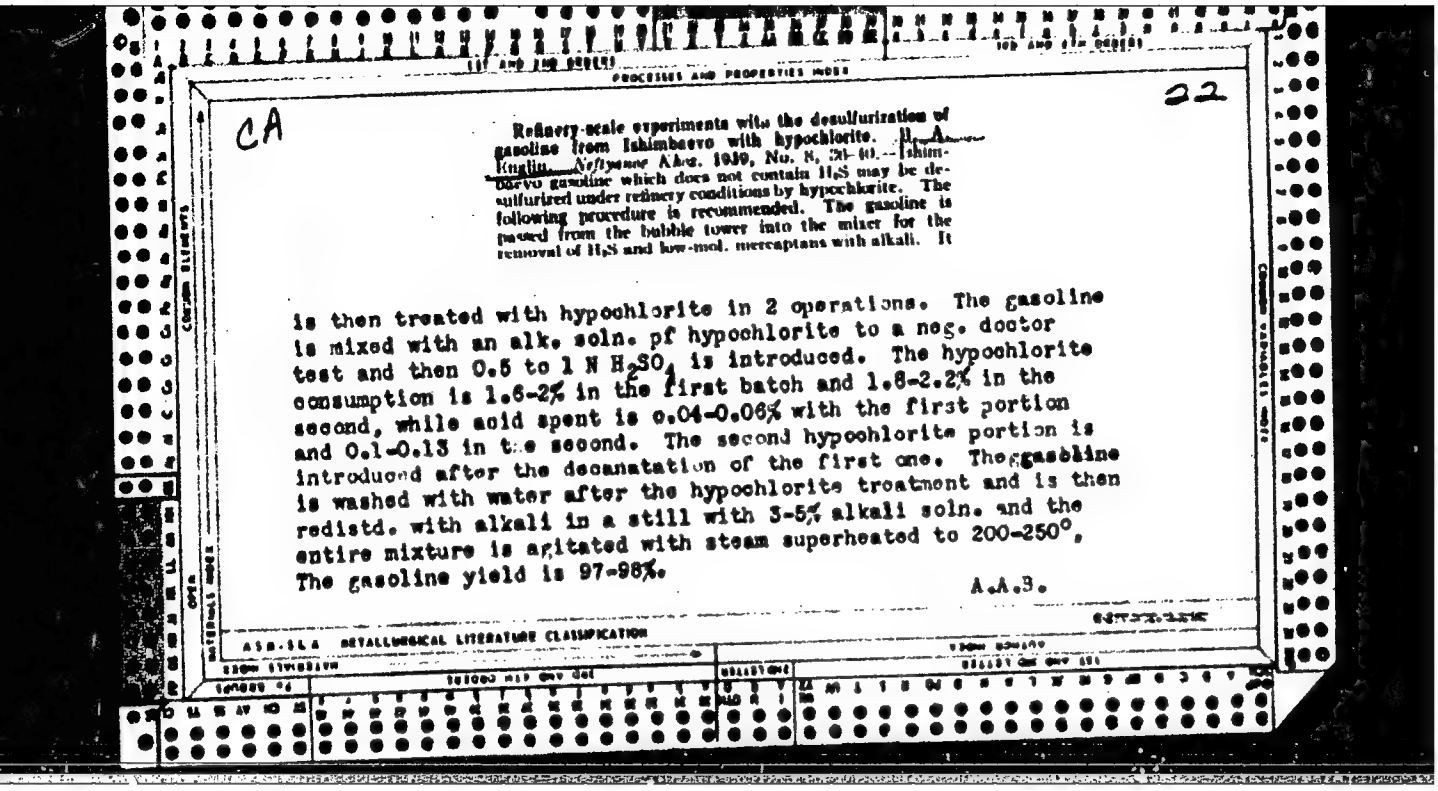
Desulfurization of gasolines from the Ishimbaev crude oils with aluminum chloride. E. A. Boglin and V. T. Brushkiev. *Vestnik Neft.* 1939, No. 6, 110; cf. C. A. 34, 4893¹.—Desulfurization of Ishimbaev gasoline under production conditions with 0.5% of $AlCl_3$ decreased the content of S from 0.16 to 0.03% in gasoline with a final b. p. of 120° and from 0.32 to 0.1% in gasoline with a final b. p. of 192°. The sensitivity of these desulfurized gasolines to the addn. of PbEt$_4$ increased considerably. Existing refining equip. can be used for the desulfurization.

W. R. Henn

A58-16A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

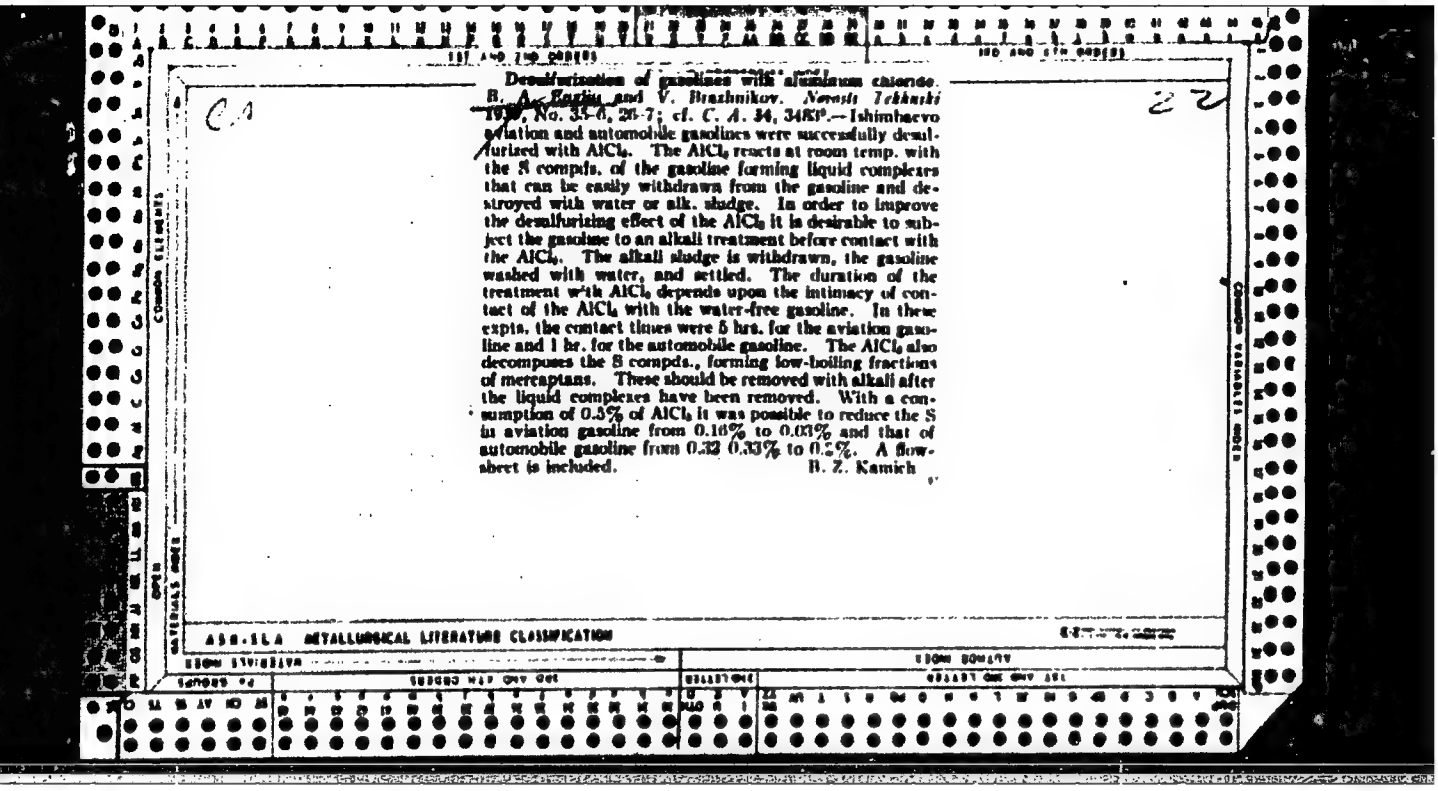
22

CA

Refinery-scale experiments with the desulfurization of gasoline from Ishimbaevo with hypochlorite. H. A. Englin. *Neftyanoe Khoz.* 1939, No. 8, 70–80.—Ishimbaevo gasoline which does not contain H_2S may be desulfurized under refinery conditions by hypochlorite. The following procedure is recommended. The gasoline is passed from the bubble tower into the mixer for the removal of H_2S and low-mol. mercaptans with alkali. It is then treated with hypochlorite in 2 operations. The gasoline is mixed with an alk. soln. of hypochlorite to a neg. doctor test and then 0.5 to 1 N H_2SO_4 is introduced. The hypochlorite consumption is 1.6–2% in the first batch and 1.8–2.2% in the second, while acid spent is 0.04–0.06% with the first portion and 0.1–0.13 in the second. The second hypochlorite portion is introduced after the decantation of the first one. The gasoline is washed with water after the hypochlorite treatment and is then redistd. with alkali in a still with 3–5% alkali soln. and the entire mixture is agitated with steam superheated to 200–250°. The gasoline yield is 97–98%.

A.A.B.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



Desulfurization of gasolines with aluminum chloride. B. A. Englin and V. Brazhnikov. *Neftyanoe Tekhnicheskoe Delo*, No. 35-6, 26-7; cf. *C. A.* 34, 3483⁹.—Ishimbaevo aviation and automobile gasolines were successfully desulfurized with $AlCl_3$. The $AlCl_3$ reacts at room temp. with the S compds. of the gasoline forming liquid complexes that can be easily withdrawn from the gasoline and destroyed with water or alk. sludge. In order to improve the desulfurizing effect of the $AlCl_3$ it is desirable to subject the gasoline to an alkali treatment before contact with the $AlCl_3$. The alkali sludge is withdrawn, the gasoline washed with water, and settled. The duration of the treatment with $AlCl_3$ depends upon the intimacy of contact of the $AlCl_3$ with the water-free gasoline. In these expts. the contact times were 5 hrs. for the aviation gasoline and 1 hr. for the automobile gasoline. The $AlCl_3$ also decomposes the S compds., forming low-boiling fractions of mercaptans. These should be removed with alkali after the liquid complexes have been removed. With a consumption of 0.5% of $AlCl_3$ it was possible to reduce the S in aviation gasoline from 0.16% to 0.03% and that of automobile gasoline from 0.32 0.33% to 0.2%. A flow-sheet is included. B. Z. Kamich

ENGLIN, B.A.

AID P - 577

Subject : USSR/Engineering

Card 1/1 Pub. 78 - 14/22

Authors : Englin, B. A. and Rogacheva, T. P.

Title : Temperature of turbidity of aviation gasoline

Periodical : Neft. Khoz., v. 32, #8, 61-63, Ag 1954

Abstract : General discussion of the turbidity of aviation gasoline and non-suitability of this property for performance characteristics because of its variability with atmospheric conditions. Two tables and 7 Russian references (1931-1949).

Institution : None

Submitted : No date

Translation D 2176 54, 15 June 55

ENGLIN, B.A.

USSR/Chemical Technology. Chemical Products and Their Application--Treatment of natural gases and petroleum. Motor fuels. Lubricants. I-14

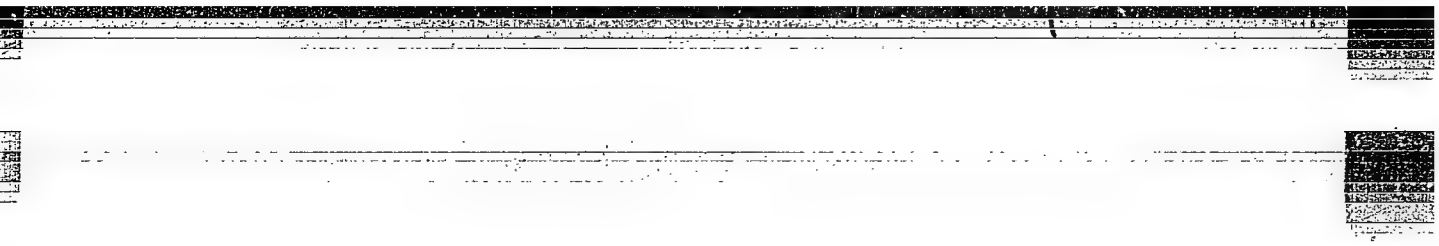
Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9346

Author : Sablina, Z. A., Gureyev, A. A., and Englin, B. A.
Inst : Not given
Title : An Antioxidant for Fuels Containing Unsaturated Hydrocarbons

Orig Pub: Neft khoz.-vo, 1954, No 9, 74-77

Abstract: The evaluation of an antioxidant of narrow fractional composition, "tormoznyy preparat" ["inhibitor"] (TP), prepared from wood pitch. Laboratory research and experiments with the storage of gasoline have shown that the new antioxidant is markedly more effective than the compound presently used in the stabilization of gasolines (type B). The induction period in the oxidation of cracked gasoline stabilized with TP

Card 1/2



ENGLIN, B.A.

AID P - 3688

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 15/22

Author : Englin, B. A., Eng. Col., Kand. of Tech. Sci.

Title : Formation of ice crystals in fuel and preventive measures

Periodical : Vest. vozd. flota, 1, 68-74, Ja 1956

Abstract : The author considers the above problem in relation to two types of aviation fuels, T-1 and B-96/130. In particular, he discusses: dissolubility of water in fuels, dependence of the water content of fuel on air humidity, speed of saturation of dehumidified fuels, speed of saturation and dehumidified fuels, speed of saturation and dehumidification of fuel in various layers.

Institution : None

Submitted : No date

ENGLIN, B.A.; TUGOLUKOV, V.M.; SAKODYNSKAYA, T.P.

Relationship of the dissolved water content of hydrocarbon fuels to relative humidity at different temperatures. Khim. i tekh.topl. no.11:43-46 N '56. (MLRA 9:11)

1. Nauchno-issledovatel'skiy institut goryuche-smazochnykh materialov.
(Hydracarbons) (Fuel) (Humidity)

SOV/65-58-9-8/16

AUTHORS: Englin, B. A; Chertkov, Ya. B; Tugolukov, V. M.

TITLE: Disintegration of Cadmium Coatings in Fuels With Increased Mercaptan Content and Methods of Preventing the Same. (Razrusheniye kadmiyevykh pokrytiy v toplivakh s povyshennym soderzhaniyem merkaptanov i puti ego predotvrashcheniya)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr 9, pp 38 - 43, (USSR)

ABSTRACT: When using fuels with increased mercaptan content gelatinus deposits are formed which can lead to a reduction or cutting off of the fuel supply into the engine. In aeroplane engines a decrease in the temperature leads to separation of the excess water from the fuel and deposition on the surface of the engine components in the form of microscopic droplets. According to I.Ye. Bespolov et al. the degree of disintegration of coating is proportional to the weight loss of the article which is made of cadmium and inversely proportional to the mercaptan content in the fuel. On analysing the deposits it was found that they mainly consist of cadmium mercaptides (Ref.4). Analogous results were obtained by the authors. Fuels with the following mercaptan con-

Card 1/4

Disintegration of Cadmium Coatings in Fuels With Increased Mercaptan Content and Methods of Preventing the Same.

tent were tested: TS-1 (0.047%), fuel T-2 (0.052%), cracking-kerosene (0.059%) and also fuel TS-1 (GOST 7149-54: 0.005%) and T-1 (GOST 4138-49: 0.0003%). Three samples were prepared from each fuel (desiccated, saturated with water and with natural water content). Cadmium coils were placed in these samples and stored for ten days under conditions analogous to those which occur in the fuel systems of aeroplanes. Table 1 gives the results obtained during the storing of cadmium coils in fuels with varying water and mercaptan content after ten days. The formation of deposits in the fuel and precipitation on the cadmium coils is accompanied not only by a decrease in the mercaptan content and loss of weight of the coils, but by decrease in the amount of water dissolved in the fuel (Table 2). Table 3: the composition of the deposit formed on the cadmium coil during prolonged storing in a tank containing the standard oil TS-1. Spectral semi-quantitative analysis of the ash was carried out by the Institute of Geochemistry, AN USSR (Institut geokhimii AN SSSR), and the composition

Disintegration of Cadmium Coatings in Fuels With Increased Mercaptan Content and Methods of Preventing the Same.

was as follows: Cd - 43.75%, Si - 10%, Cu - 7.5%, Mg - 1.9%, Al - 1.9%, Fe - 0.3%, Zn - 0.3%, Cr - 0.3%, Ca - 0.3%, Pb, Ba, Sb, Ni, Na - traces. Elementary analysis confirmed that the disintegration products consisted of sulphur compounds of cadmium, and that the formation of deposits is mainly due to the presence of aliphatic mercaptans and an increased water content. During further tests the addition of amine vat residues as effective additives to the fuel was investigated. These residues had a boiling point above 100°C, a molecular weight of 150 and contained 7% of N. 0.005 - 0.03% of this residue was added to the fuel TS-1 containing 0.047% mercaptans. Results are given in Table 4. These additives inhibited the disintegration of the cadmium coatings. The amines used as surface active agents protect the metallic surface from direct contact with and the action of mercaptans. Table 5: data on the disintegration of cadmium coils in fuels containing 0.03% of amine vat residues (water content in the fuel = 0.0099%). The amine residues dissolve

SOV/65-58-9-8/16

Disintegration of Cadmium Coatings in Fuels With Increased Mercaptan Content and Methods of Preventing the Same.

easily in the fuel and do not separate out either at low or at increased temperatures. There are 5 Tables and 7 References: 1 English and 6 Soviet.

1. Fuel additives--Chemical effects 2. Fuels--Moisture factors
3. Cadmium coatings--Disintegration 4. Thiols--Performance
5. Fuels--Test methods

Card 4/4

ROZHKOV, I.V.; KORNILOVA, Ye.N.; NNGLIN, B.A.

Chemical stability of ethylated gasolines of varied hydrocarbon composition. Azerb. neft. khoz. 37 no.1:34-36 Ja '58. (MIRA 11:6)
(Gasoline)

ENGLIN, B.A.

11(4), 15(5) PHASE I BOOK EXPLOITATION SOV/1777

Losikov, Boris Vital'yevich, Nikolay Gavrilovich Puchkov, and Boris Abramovich Englin

Osnovy primeneniya nefteproduktov (Main Aspects of Petroleum Product Utilization) 2d ed., rev. and enl. Moscow, Gostoptekhizdat, 1959. 566 p. 6,500 copies printed.

Exec. Ed.: L.A. L'vova; Tech. Ed.: I.G. Fedotova

PURPOSE: This book is intended for engineers and technicians of the petroleum industry and other branches of industry connected with the production of petroleum products and their utilization.

COVERAGE: In the opinion of the authors, the increasingly growing demand for upgraded fuels and lubricants to operate machines and engines of the most modern systems and designs has made necessary the development of a new branch of science dealing with the use of such petroleum products as fuel, lubricating oil, and grease. In the first part of this work, which is a revision

Card 1/14

of the first edition, the authors discuss the various kinds of fuels used to run internal combustion engines with spark plug ignition, diesel engines, and jet engines. The chemical composition of these fuels, their properties, stability, ignition, combustion and behavior during various phases of operation are analyzed. Considerable attention has been given both to the additives which improve antiknock properties of gasoline as well as to the admixture of ethyl fluids. The problem of reducing carbon deposition, scaling and gumming, as well as of the corrosion of various engine parts and mechanisms are also discussed at length. The second part of this work is devoted to the use of lubricants, their properties, viscosity, oxidation resistance, etc. The authors discuss problems connected with the lubrication of internal combustion engines, transmission systems, jet engines, turbojet engines, turboprop engines and compressors of different types. Additives which improve the lubricating properties of oils, their oxidation resistance, and wear resistance are also discussed.
Chapters I, II, and IV of Part I were written by Candidate of Technical Sciences, B.A. Englin; Chapters III and V of Part I and a section of Chapter III of Part II were written by

Card 2/4

N.G. Puchkov. Part II was written by Doctor of Technical Sciences, Professor B.V. Losikov, with the exception of the section Lubrication of Instruments which was written by Candidate of Chemical Sciences G.I. Fuks, and the section Viscosity of Lube Oil Additives which was written by Candidates of Technical Sciences, N.I. Kaverina and N.S. Puchkov. The text contains numerous graphs and tables as well as a number of bibliographic references listed separately for each chapter.
There are 573 references of which 380 are Soviet.

TABLE OF CONTENTS:

83406

S/065/60/000/003/001/003
E071/E484

11.1210

AUTHORS: Englin, B.A. and Tugolukov, V.M.

TITLE: The Dependence of the Content of Dissolved Water in Hydrocarbon Fuels on the Temperature Difference Between Fuel and Air

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No.3, pp.45-49

TEXT: It was shown earlier (Ref.1) that irrespective of temperature and the hydrocarbon composition of fuels, their content of dissolved water at a given temperature is directly related to the relative air humidity and is governed by Henry's law according to the formula

$$C = C_{max} \Psi = \frac{C_{max}}{P_{sat}} P$$

where: C - the water content of the fuel at a given relative air humidity and temperature; C_{max} - maximum content of water soluble in the fuel at a given temperature; Ψ - relative humidity; P - water vapour pressure at a given temperature; P_{sat} - saturated vapour pressure of water at a given temperature. The validity of the above formula was confirmed only for the case when air and fuel

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83406
S/065/60/000/003/001/003
E071/E484

The Dependence of the Content of Dissolved Water in Hydrocarbon Fuels on the Temperature Difference Between Fuel and Air

temperatures are equal. In the present work the validity of this formula for conditions when the fuel temperature is above or below that of air was investigated. The experimental procedure is described in some detail. The experimental data indicated that: 1) on simultaneous lowering of fuel and air temperature, at a constant relative air humidity or even with humidity increasing by 20 to 30%, the content of water dissolved in the fuel decreases; 2) due to the fact that on cooling, the fuel temperature is somewhat higher than that of the air, the difference in the water content of fuel before and after cooling increases with increasing temperature difference between air and fuel; 3) on warming up, the air temperature is usually higher than that of fuel. At a certain temperature difference between air and fuel, which is determined by the relative humidity of the air, the condensation of water vapour from air into fuel can take place. With simultaneous decrease in the air and fuel temperature, the content of water in the fuel decreases, and so the excess water should either pass into the air or separate as a second liquid phase. The latter often

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83406
S/065/60/000/003/001/003
E071/E484

The Dependence of the Content of Dissolved Water in Hydrocarbon Fuels on the Temperature Difference Between Fuel and Air

takes place when the excess water is not completely transferred from fuel to air. If the separation of water from fuel and its condensation from air into fuel takes place at negative temperatures, ice crystals form in the fuel. It is concluded that the above formula for calculating the content of water dissolved in fuel is also valid when the air and fuel temperatures are not the same. There are 3 figures, 2 tables and 5 references: 4 Soviet and 1 English.

Card 3/3

11.4000

77937
SOV/65-60-3-10/19

AUTHORS: Englin, B. A., Tugolukov, V. M.

TITLE: Relation Between the Amount of Dissolved Water in Hydrocarbon Fuels and Temperature of Fuel and Air

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, Nr 3, p 49 (USSR)

ABSTRACT: The amount of dissolved water in hydrocarbon fuel can be calculated by the formula: $C = \frac{C_{max}}{P_w^{sat}} P$; where C is the amount of water in fuel at given temperature and relative humidity; C_{max} is maximum amount of water in fuel at given temperature; P_w^{sat} is pressure of saturated water vapor at given temperature; and P is pressure of water vapor at given temperature. The results of experiments are shown in Table 1. The amount of water in fuel decreases when the temperature of air and that of fuel is lowered simultaneously and at the same relative humidity

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of the air, or even when the relative humidity of air increases by 20-30%. Since the temperature of fuel is higher than that of air on cooling, the difference in the amount of water prior and after cooling increases proportionally to the difference of the temperature of air and fuel. Condensation of water vapors from air into the fuel takes place when the temperature of air rises. There are 2 tables; 3 figures; and 5 references, 4 Soviet, 1 U.S. The U.S. reference is: Greer, J. Amer. Chem. Soc., 52, 4191 (1930).

77937
SOV/65-60-3-10/19

1	2		5	6		8	10	11
	3	4		p	7			
T-1	30	21,5	60	11,4	31,8	0,0109	0,0039	0,0039
	40	21,5	60	11,4	55,3	0,0160	0,0031	0,0033
	−7	−2	54	2,1	2,53	0,0035	0,0028	0,0029
	−7	−2	85	3,2	2,53	0,0035	0,0041	<0,0035 *
	13	23	66	13,0	11,3	0,0050	0,0273	<0,0050 *
	4	23	66	13,9	0,1	0,0040	0,0155	<0,0040 *
TS-1	18	24	53	11,9	15,5	0,0075	0,0061	0,0058
	2	20,5	10	2,6	5,29	0,0040	0,0024	0,0029
	4,5	26	30	7,0	6,3	0,0045	0,0073	<0,0045 *
	6,0	26	25	6,3	7,0	0,0047	0,0036	0,0042
	50	23,8	87	19,2	92,5	0,0280	0,0063	0,0058
	50	25,5	83	20,3	92,5	0,0280	0,0055	0,0060
	40	25,5	88	21,0	55,3	0,0180	0,0068	0,0070
	29,7	20	84	21,2	31,4	0,0125	0,0079	0,0084
Toluene	50	18	95	14,7	92,5	0,0270	0,0168	0,0154
	50	21,5	95	18,2	92,5	0,0270	0,0211	0,0192
	40,5	26,5	88	22,9	56,8	0,0775	0,0337	0,0313
	30	26,5	84	21,8	31,8	0,0620	0,0453	0,0125
	3,5	19	8	1,3	5,9	0,0255	0,0055	0,0056
	3,0	19,5	15	2,5	5,7	0,0250	0,0116	0,0110
	4,5	22	31	6,13	6,3	0,0266	0,0269	0,0259

Card 3/4

Table 1.

Relation Between the Amount of Dissolved Water in Hydrocarbon Fuels and Temperature of Fuel and Air

77937
SOV/65-60-3-10/19

Key for Table 1. (1) Fuel; (2) temperature, ^{o} C; (3) of fuel; (4) of air; (5) relative humidity of air, %; (6) pressure of water vapor, mm Hg; (7) P_w^{sat}; (8) C_{max}; (9) amount of water, %; (10) determined by the use of calcium hydride; (11) calculated by formula.

Card 4/4

FREYDLIN, L.Kh.; LITVIN, Ye.F.; SHUKOVA, I.F.; ENGLIN, B.A.

Effect of the nature of solvent and the amount of Raney nickel catalyst on the orientation of hydrogen addition to trans-piperylene. Neftekhimiia 1 no.4:484-488 Jl-Ag '61. (MIRA 16:11)

1. Institut organicheskoy khimii AN SSSR imeni N.D. Zelinskogo.

PHASE I BOOK EXPLOITATION SOV/5706

Englin, Boris Abramovich

Primeneniye motornykh topliv pri nizkikh temperaturakh (Use of Motor Fuels at Low Temperature) Moscow, Gostoptekhizdat, 1961. 98 p. 4,175 copies printed.

Scientific Ed.: T. D. Yefremova; Tech. Ed.: I. G. Fedotova.

PURPOSE : This book is intended for technical personnel working with automotive, air and water transportation where the use of motors at low temperature is required.

COVERAGE: The book describes the behavior of liquid fuels (jet, aircraft, automobile, and diesel) at low temperatures, and discusses the changes undergone by these fuels under conditions of ice formation, increased viscosity, separation of paraffins, etc. The necessary measures for storing, pumping, and using fuels under arctic conditons, and the operation of aircraft engines at high altitudes are also discussed. No personalities

Card 1/4

are mentioned. There are 101 references: 67 Soviet, 32 English, and 2 German.

TABLE OF CONTENTS:

S/065/61/000/003/002/004
E194/E284

AUTHORS: ~~Englin, B. A.~~, Otkupshchikov, G. P. and Rubinshteyn, I. A.

TITLE: The Influence of Temperature and Fuel Quality on the Lacquering of Injection Nozzles

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1961, No. 3, pp. 55-60

TEXT: Rig tests were made to study the influence of temperature and fuel quality on the lacquering of diesel engine injection nozzles. In the rig filtered fuel was delivered by a fuel pump to six nozzles each with its own measuring vessel. The nozzles were maintained at the required temperature by means of a thermostatic bath so that the fuel became hot and could oxidize and resins could form in it. The tendency of the fuel to form lacquer deposits on the nozzle needles was assessed from the thickness of the lacquer films on the non-working part of the needle and by the condition of the needles. The temperature at which, during the test period, a lacquer film just visible to the naked eye was formed was defined as the initial lacquering temperature. The fuels tested included diesel fuel grade

Card 1/3

S/065/61/000/003/002/004
E194/E284

The Influence of Temperature and Fuel Quality on the Lacquering of Injection Nozzles

A3 ГОСТ 4749-49 (DZ to standard GOST 4749-49) containing 0.157% sulphur, diesel fuel ATS-0.3 (DTS-0.3), ATS-1.0 (DTS-1.0) and ATS-1.16 (DTS-1.16) (in each case the number refers to the sulphur content), catalytic diesel fuel grade DTK with a sulphur content of 0.13 and synthetic diesel fuel obtained by hydrogenation of coal tar with a sulphur content of 0.035. The initial lacquering temperature depends very much on the fuel quality, thus in fuels DTS-1.16, DTK and the synthetic fuel lacquering had already commenced at a temperature of 124-132°C, the corresponding temperature for fuel DTS-1.0 was 166°C and for fuel DZ over 170°C. With increasing temperature lacquer formation was most intensive with the synthetic fuel. The results clearly show that the nozzle operating temperature in diesel engines is the main factor leading to lacquering of the nozzles. It was found that the actual resin content determined according to standard test method ГОСТ 8489-57 (GOST 8489-57) does not characterize the lacquering tendency of the fuel. Neither is there any direct relationship between the

Card 2/3

S/065/61/000/003/002/004
E194/E284

The Influence of Temperature and Fuel Quality on the Lacquering of Injection Nozzles

total sulphur content of the diesel fuel and the needle lacquering tendency. However, there is a certain inter-relationship between the mercaptan and adsorbable resin content of the fuels and the lacquering tendencies. Special tests revealed that the formation of lacquer in nozzles at temperatures below 190°C is due to mercaptans and adsorbable highly oxidized resinous components of the fuel. At temperatures of 190°C and above hydrocarbon components of the fuel can themselves form lacquer in the nozzles. The results relate to tests of 20 hours. It is also shown that when the diesel fuels are oxidized at temperatures above 120-130°C the resinous compounds are polymerized, which does not occur at lower temperatures. The intensity of the polymerization processes that takes place at these temperatures determines the degree of lacquering of the nozzles. There are 4 tables and 11 references: 7 Soviet and 5 non-Soviet.

Card 3/3

SEMENIDO, Ye.G., prof., doktor tekhn. nauk; ENGLIN, B.A.; PAPOK, K.K., prof. doktor tekhn. nauk; ZARUBIN, A.P.; RAGOZIN, N.A.; SHIMONAYEV, T.S.; CHERTKOV, Ya.B.; LIVSHITS, S.M.; BESSMERTNYY, K.I.; LOSIKOV, B.V.; SABLINA, Z.A.; ROZHKOV, I.V.; GUREYEV, A.A.; FAT'YANOV, A.D.; ZRELOV, V.N.; ZARUDNYY, P.P.; BRATKOV, A.A.; BARON, I.G.; LEVINA, Ye.S., ved. red.; TITSKAYA, B.F., ved. red.; FEDOTOVA, I.G., tekhn. red.

[Motor, jet, and rocket fuels] Motornye, reaktivnye i raketnye topliva. 4., perer. i dop. izd. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1962. 741 p. (MIRA 15:2)

(Rockets (Aeronautics))—Fuel)
(Jet propulsion)
(Motor fuels)

OTKUPSHCHIKOV, G.P.; ENGLIN, B.A.

Causes of the destruction of fine-wooled felt plates of fuel filters. Khim. i tekh.topl.i masel 7 no.3:56-57 Mr '62.
(MIRA 15:2)

(Filters and filtration)
(Diesel fuels)

18.8300 1413 1416 33447
11.0140 S/065/62/000/002/004/004
E194/E484

AUTHORS: Rozhkov, I.V., Churshukov, Ye.S., Englin, B.A., Sablina, Z.A.

TITLE: An accelerated method of assessing the corrosivity of fuels

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.2,1962,60-64

TEXT: At present the corrosivity of fuels is assessed by a copper strip corrosion test of 3 hours at 50°C (ГОСТ 632-52 (GOST 632-52)). This method reveals corrosive sulphur but not other products that may cause corrosion in practice. Corrosion test methods are briefly reviewed and it was decided to develop a new one in which water droplets are precipitated from the fuel on to the test piece. The test is carried out in a water-jacketted conical flask. The specimen, immersed in the fuel to be tested, rests on a water cooled platform. A small container of water is suspended in the air space above the fuel. When volatile fuel is tested a condenser is fitted above the flask. The test duration is four hours with a water jacket temperature of 90°C and the table for the test piece cooled by tap water. About 70 ml of fuel are required for the

Card 1/2

An accelerated method ...

test. The test piece is 20 mm diameter; it is cleaned with emery cloth and washed in petroleum spirit. Water, whether dissolved in the fuel or evaporated from the container in the air space, condenses on the test piece. After the test the test piece is washed in an alcohol-gasoline mixture and if a ferrous test piece is used the corrosion products are first removed with hydrochloric acid etching solution. The loss of weight is then measured. The maximum error of repeatability is ±13% and the average about ±8%. A number of test results obtained with the new method are given. It is shown that the corrosivity of diesel fuel depends on the mercaptan content. The hydrocarbon composition can also affect the corrosivity and in particular the presence of products of thermal cracking greatly increases the corrosivity. The method can also be used to assess the influence of corrosion inhibitors such as the additive AMBA (AMBA) which has been proposed for testing tanks both aboard ship and on land and it is shown that the use of 0.01% of this inhibitor gives satisfactory protection of ferrous metals against corrosive fuels.
I.A.Rubinshteyn is mentioned for his contribution in the tests.
There are 4 figures, 2 tables and 8 Soviet-bloc references.
Card 2/2

KARAPETYAN, Sh.A.; ENGLIN, B.A.; FREYDLINA, R.Kh.

Constants of chain transfer in the reaction of ethylene telomerization with carbon tetrachloride. Izv. AN SSSR, Ser.khim. no.7:1346-1348 Jl '63. (MIRA 16:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ethylene)
(Carbon tetrachloride)
(Polymerization)

ACCESSION NR: AP4004702 S/0065/63/000/012/0050/0055

AUTHOR: Englin, B. A.; Rozhkov, I. V.; Tugolukov, V. M.; Sakody*nskaya, T. P.

TITLE: Prevention of ice crystal formation in aviation fuels

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1963, 50-55

TOPIC TAGS: aviation fuel, ice formation, ethylcellosolve, fuel additive, antifreeze

ABSTRACT: A study has been made of the effectiveness of cellosolve (GOST 8313-60) as an antifreeze additive for T-1 and TS-1 jet fuels and B-95/130 aviation gasoline. Previous tests showed that of 100 compounds tested, cellosolve is the most effective. In studying the formation of ice in the fuels in the presence of cellosolve, the following conditions were varied: temperature (down to -60C), moisture content (0—0.13%), cellosolve content (0—0.3%), ambient relative humidity, and storage time in the laboratory, in ground storage, and in flight. Under all the conditions studied, the addition of 0.3% cellosolve completely prevented the formation of ice in the fuels. The -

Card 1/2

ACCESSION NR: AP4004702

presence of cellosolve in the fuels had no negative effect on either the physicochemical properties or the performance characteristics of the fuels. Moisture absorption in storage at 30—100% relative humidity was studied in a 1-yr test with T-1, TS-1, and B-95/130 fuel samples without cellosolve or containing 0.3% cellosolve. The moisture content of the latter remained nearly the same as that of controls throughout the year. Orig. art. has: 4 tables and 2 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 03Jan64 ENCL: 00

SUB CODE: FL NO REF SOV: 007 OTHER: 007

Card 2/2

FREYDLIN, L.Kh.; LITVIN, Ye.F.; ZHUKOVA, I.F.; ENGLIN, B.A.

Sequence of reactions in the process of hydrogenation of piperylene on a skeletal nickel catalyst. Kin.i kat. 4 no.1:128-133 Ja-F '63. (MIRA 16:3)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Piperylene) (Hydrogenation) (Nickel catalysts)

SOURCE: AN SSSR. Doklady, v. 159, no. 6, 1964 1144-1147

telomerization mechanism

ABSTRACT: The study investigates the mechanism of free-radical

$$CCl_4 + C_2H_4 \xrightarrow{Fe(CO)_5} Cl(CH_2CH_2)_n CCl_3 \quad (1)$$

and

$$CHCl_3 + C_2H_4 \xrightarrow{Fe(CO)_5} H(CH_2CH_2)_n CCl_3. \quad (2)$$

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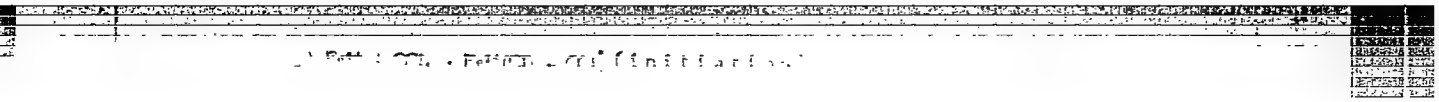
a) $Fe(CO)_5 + 2CCl_4 \rightarrow [Fe(CO)_4Cl_2] + CO + 2Cl_2$ (initiation);

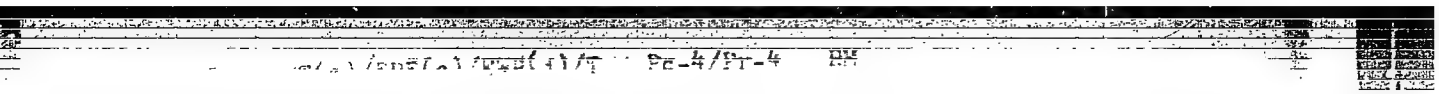
[redacted]

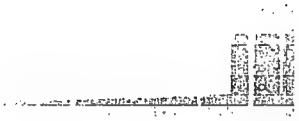


FREYDLINA, R. Kh.; VELICHKO, F.K.; ENGLIN, B.A.

Homolytic diproportionation of atoms in polybromomethanes. Izv. AN SSSR Ser. khim. no.11:2069-2071 N '64 (MIRA 18:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.





L 59064-65
ACCESSION NR: AP5018558

to CCl_4, was practically thermoneutral. The constants of chain transfer were expressed in a Q-e scheme, where Q_{tel} and Q_M are proportional to the reactivities of the telogen and monomer, while e_{tel} and e_M characterize their polar [illegible] tion. The increase in the transfer constants with [illegible] n from 1 to 5 monomer units was found to be essentially [illegible] to the change in the rate constants of the reactions of chain [illegible] of a reduction of the inductive [illegible]

SUBMITTED: 01Jun64 ENCL: 00 SUB CODE: OC, GC

NR REF SOV: 002 OTHER: 009 JPRS

Card 2/2

ACCESSION NR: AP5004257 S/0065/65/000/001/0052/0054

AUTHOR: Englin, B. A.; Churshukov, Yu. S.; Fomina, A. M.; Maslennikova, Z. V.

TITLE: Method for the qualitative detection of hydrogen sulfide in jet fuels

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1965, 52-54

TOPIC TAGS: jet fuel, hydrogen sulfide, analysis, potentiometry

ABSTRACT: A new potentiometric method has been proposed for the qualitative detection of hydrogen sulfide in jet fuel. The method consists of determining the potential of a silver sulfide electrode (GOST 9558-60 standard) before and after removal of hydrogen sulfide by a 3-minute treatment of the fuel with 2% NaOH in a 1/1 ratio, followed by washing the fuel to neutral wash waters. A change in the electrode potential resulting from the NaOH treatment, not exceeding 100 mv, indicates that there is no hydrogen sulfide in the fuel. Since there is no elemental sulfur in commercial TS-1 jet fuel, it cannot interfere. When applied to TS-1 fuel, the new method proved much more reliable and objective than the existing GOST 10227-62 test

Card 1/2

L 24183-65

ACCESSION NR: AP5004257

... filter paper impregnated with lead acetate. Therefore, the ...

plant or in the field. Orig. art. has: 2 tables. [JPRS]

ASSOCIATION: none

SUBMITTED: 00	ENCL: 00	SUB CODE: FF	
NO REF SOV: 000	OTHER: 003	ATD PRESS: 3175	

Card 2/2

ENGLIN, B.A.; FREYDLINA, R.Kh.

Chain transfer constants in telomerization of ethylene by chloroform.
Izv. AN SSSR. Ser. khim. no.3:425-431 '65, (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 9427-66 EWT(m)/EWP(j) RM

ACC NR: AP5027728 UR/0065/65/000/009/0042/0046
665.051.5 4

AUTHOR: English, B.A.; Plate, A.F.; Tugolukov, V.M.; Pryanishnikova, M.A. 44,55 44,55 44,55 44,55 71 70 B

TITLE: Water solubility in individual hydrocarbons

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 9, 1965, 42-46

TOPIC TAGS: solubility, water, hydrocarbon, aromatic hydrocarbon, alkyl radical, atomic structure, molecular weight, carbon, fuel, aviation gasoline, ice, crystal, solvent action, organic solvent, solution concentration

ABSTRACT: This research was carried out because the available data on water solubility is confined to a limited number of hydrocarbons and are frequently inconsistent. The experiments were carried out with 61 hydrocarbons of different classes at various temperatures. The experimental results show that 1) water solubility in hydrocarbons is greatly affected by the hydrocarbon structure; 2) water solubility is highest in aromatic hydrocarbons particularly in benzene; 3) water solubility in aromatic hydrocarbons is mainly conditioned by the molecular weight and side-chain branching of the hydrocarbons, decreasing more drastically with increase in molecular weight and less drastically with side-chain branching; 4) substitution of a five-member cycloalkyl radical for an alkyl radical in the aromatic ring has no substantial effect on the water solubility; 5) water solubility in bicyclic aromatic hydrocarbons is higher than

Card 1/2

L 9427-66

ACC NR: AP5027728

in monocyclic containing the same number of carbon atoms; 6) water solubility in naphthenic hydrocarbons and paraffins also decreases with an increase in molecular weight but to a lesser degree than in aromatic hydrocarbons; 7) water solubility in paraffins increases with an increase in branching; 8) at the same molecular weight all six-member naphthenic hydrocarbons dissolve less water than the five-member hydrocarbons; 9) naphthenic hydrocarbons with alkyl groups of normal structure as side chains are capable of dissolving more water than normal paraffins of corresponding molecular weight; 10) bicyclic naphthenic hydrocarbons dissolve considerably less water than monocyclic hydrocarbons with the same number of carbon atoms; 11) unsaturated hydrocarbons are capable of dissolving more water than naphthenic hydrocarbons and paraffins of corresponding structure, but water solubility in unsaturated hydrocarbons is lower than in aromatic hydrocarbons differing in this respect with data by J.W. Gibbs. Collected Work. New York, 1931 and C. Black et al. J. Chem. Phys., v. 16, no. 5, 1943; and 12) bicyclo [2.2.1] heptadiene dissolves less water than its isomeric toluene but more than methyl cyclohexane having the same number of carbon atoms; the same is true of 1,4,5,8 - Bisendomethylene - 1,4,4a,5,8,8a - hexahydronaphthalene. It is noted that the water solubility in cycloheptatrien is greater than even in toluene. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: FP, GC

NO REF SOV: 009 OTHER: 004

Card 2/2

ENGLIN, B.A.; FREYDLINA, R.Kh.

Kinetics of ethylene telomerization by carbon tetrachloride.
Zhur. fiz. khim. 39 no.9:2208-2214 S '65. (MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 22233-66 EWP(j)/EWT(m)/T/EWP(v) IJP(c) RM/WW/WE

ACCESSION NR: AP6006494 (N) SOURCE CODE: UR/0138/65/000/010/0052/0054

AUTHOR: Englin, B. A.; Solomatin, A. V.; Fomina, A. M.; Tugolukov, V. M. 79 B

ORG: Scientific-Research Institute of the Rubber Industry (Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti)

TITLE: Investigation of the mutual effect of rubber coatings and fuels on their properties during storage

SOURCE: Kauchuk i rezina, no. 10, 1965, 52-54

TOPIC TAGS: jet fuel, fuel storage, storage tank, insulated storage tank, fuel contamination, fuel corrosiveness, rubber, surface active coating, corrosion protection/SKN 26 rubber, SKN 40 rubber, T 1 jet fuel, T 2 jet fuel, 88 N glue, 3 300 glue, DS diesel fuel

ABSTRACT: The authors studied the effect of fuels on the degree of swelling of SKN-26 and SKN-40 rubbers and the effect of these rubbers, as well as brand 88-N and 3-300 glues and a sealing agent based on a brand U-30s thiokol paste, vulcanized at room temperature and at 145C, on the properties of fuels. The degree of swelling of the rubbers was investigated in T-1 and T-2 jet fuels, in DS diesel fuel, and in solar oil at a temperature of 18—25C for a period of 6 months. In

Card 1/2 UDC: 678.026.3:662.75:539.196

L 22233-66
ACCESSION NR: AP6006494

order to select control media, mixtures containing 80% cetane and 20% green oil or 90% cetane and 10% green oil were used for the study of the degree of swelling of rubber. It was found that the degree of swelling of SKN-26 rubber in T-1 and T-2 and in DS amounts to 10—15%, and that of SKN-40 rubber to 8—12%. In the contacting of the rubber coatings of fuel storage tanks with jet fuels, the greatest effect on the acidity of the fuels is produced by SKN-40 rubber and brand 88-N glue. SKN-26 rubber has an insignificant effect on the acidity of the fuels. U-30s sealing agent has almost no effect on the acidity of the fuels. Brand 88-N glue has the greatest effect on the content of gums in the fuel, i.e., the acidity of the fuels and the gum content in the fuels increase. The other physicochemical properties of the fuels remain unaltered. In conclusion, the authors recommend SKN-26 rubber with any glue and a sealing agent based on brand U-30s Thiokol paste as an anticorrosion coating for fuel storage tanks. Orig. art. has: 1 figure and 3 tables.

SUB CODE: 07, 11 / SUBM DATE: none

Card 2/2 nst

PISMENOV, V.A.; ENGLIN, B.A.

Filterability of type T-5 fuels. Khim. i tekh. topl. i masel 10 no.12:48-51 D '65. (MIRA 19:1)

ACC NR: AP6001883 SOURCE CODE: UR/0065/65/000/012/0048/0051

AUTHOR: Puskunov, V. A.; Englin, B. A. 44,55 44,55

ORG: none

TITLE: Flow of T-5 type [jet] fuels through a filter

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1965, 48-51

TOPIC TAGS: jet fuel, filtration/T 5 jet fuel

ABSTRACT: A study has been made of the filterability of T-5 type, high-boiling jet fuels. The experiments were carried out in a special apparatus using an FG-25 aviation filter, briefly described in the source, with pre-filtered fuels with or without 0.3% cellosolve anti-icing additive. The criterion of filterability was the temperature at which a flow rate of 4 kg/sec at a pressure drop of 6 kg/cm^2 max across the filter was attained. It was found that filtration difficulties due to viscosity proper arise when viscosity rises to 250—280 cs. Filtration difficulties at lower viscosities are mainly due to the precipitation of ice crystals or high-boiling hydrocarbons. Anomalous viscosity, which is typical of oil fractions and diesel fuels, is also in evidence in T-5 type jet fuels. Cellosolve, an anti-icing additive for T-1 type jet fuels, is also suitable for T-5 fuels. Orig. art. has: 2 figures and 3 tables. [SM]

SUB CODE: 21/ SUBM DATE: none/ ORIG: 004/ OTH REF: 001/ ATD PRESS: 4173

Card 1/1 HW UDC: 665.521.3

L 07945-67 EWT(d)/EWT(m)/EWP(f) DJ/WE

ACC NR: AP6026439 (A, N) SOURCE CODE: UR/0122/66/000/005/0047/0049

AUTHOR: Mikulin, Yu. V. (Candidate of technical sciences); Smirnov, M. S. (Candidate of technical sciences); Englin, B. A. (Candidate of technical sciences)

25

ORG: None

9

TITLE: Start-up wear in a diesel when highly flammable starting fluids are used

SOURCE: Vestnik mashinostroyeniya, no. 5, 1966, 47-49

TOPIC TAGS: diesel engine, engine starter system, engine piston, engine cylinder

ABSTRACT: The authors study the "wear" of "friction surfaces" in the ZD-6 diesel engine during cold starting in summer and winter, i. e. at ambient temperatures above and below zero. Winter start-up was done with a highly flammable "starting fluid" DA arctic diesel fuel and MT-14p condensed oil. Standard products were used for summer start-up, i. e. DL diesel fuel and "MS-20" oil with a 3% additive of TsIATIM-339." The engine was started once in the morning and once in the afternoon each day with 160 starts in the summer and an equal number in the winter. After starting the engine was idled for 15 minutes and then killed. Winter temperatures were zero to -28°C with an average of -8.4°C while summer temperatures varied from 1 to 32°C with an average temperature of 21°C. It was found that ring wear is more dependent on starting temperature than cylinder wear. Average ring wear during start-up is 3.45 times

Card 1/2 UDC: 621.436.573-324-004.62

L 07945-67
ACC NR: AP6026439

higher in winter than in summer. Sleeve wear is also higher in winter although the total wear from start-up is insignificant, e. g. average sleeve wear after 160 start-ups was only 2.2 μ while sleeves are only replaced after 300-500 μ of wear. Thus the results of this wear study show that highly flammable starting fluids may be recommended for cold starting of diesel engines. Orig. art. has: 5 figures, 3 tables.

SUB CODE: 13/ 21/ SUBM DATE: None/ ORIG REF: 006/ OTH REF: 001

Card 2/2

L 12019-66 EWT(m)/T DJ/WE

ACC NR: AP6011222 (A) SOURCE CODE: UR/0413/66/000/006/0057/0057

INVENTOR: Gureyev, A. A.; Sobolev, Ye. P.; Shchegolev, N. V.; Alekseyev, A. I.; Kornitskiy, V. V.; Minkin, M. L.; Senichkin, M. A., Livshits S.M., Englin, B.A., Mikulin, Yu.V.

ORG: none

51
B

TITLE: Starter fluid for engines with carburetors. Class 23, No. 179870

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 57

TOPIC TAGS: carburetor engine, starter fluid, engine starter fluid, antioxidant additive, antiwear additive

ABSTRACT: An Author Certificate has been issued describing a starter fluid for engines with carburetors. The fluid has a base of sulfuric ether and a mixture of low-boiling hydrocarbons with an antioxidant additive. It is suggested that to improve the functioning properties of the fluid, isopropyl nitrate or oxidation products of hydrocarbons plus an antiwear compound be added. [Translation] [NT]

SUB CODE: 21/ SUBM DATE: 13Nov64/

Card 1/1 af UDC: 661.17:621.434.019-632

ACC NR: AP6034378 (A,N) SOURCE CODE: UR/0318/66/000/010/0007/0010

AUTHOR: Englin, B. A.; Kuznetsov, Ye. G.

ORG: None

TITLE: The effect of unsaturated hydrocarbons on the tendency of diesel fuels to form deposits in injector nozzles

SOURCE: Neftepererabotka i neftekhimiya, no. 10, 1966, 7-10

TOPIC TAGS: hydrocarbon, diesel fuel, fuel injector, petroleum product, fuel deposit formation

ABSTRACT: The authors study the effect of unsaturated hydrocarbons on the susceptibility of diesel fuels toward forming deposits in injector nozzles. Two samples of kerosene were used for studying this phenomenon produced at the Moscow and Saratov petroleum processing plants. The iodine numbers of these kerosenes are 34.6 and 30.7 respectively. Kerosenes produced by cracking were added to diesel fuel in 30% quantities, where the diesel fuel was produced by hydraulic filtration of the distillate from sulfurous petroleum. The kerosene produced at the Saratov plant was also tested in its pure form. The effect of unsaturated hydrocarbons on the susceptibility of diesel fuel to deposit formation in injector nozzles was tested on a specially made injector stand which simulated an engine fuel injection system. The tests were con-

UDC: 662.753.323

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ducted at a minimum fuel pump delivery of 5.4-5.7 or 1.8-1.9 kg/hr to each section of the pump, i. e. to two injectors operating in parallel. The force required for extracting the nozzle valve from the injector housing, lacquer film thickness and weight of the deposits in the injector filter were used as the indices for evaluating the susceptibility of fuel to forming tar and varnish deposits on the fuel injector valve nozzles. The tests were carried out at fuel temperatures of 145, 157 and 170°C inside the fuel injectors. A table is given showing data on the effect which kerosene produced by thermal cracking at the Moscow Petroleum Processing Plant (both in pure form and hydraulically filtered) has on the susceptibility to deposit formation on injector nozzles. These data show that the presence of unsaturated hydrocarbons in kerosene produced by thermal cracking has a rather strong effect on their tendency to form deposits. Even at 145°C, deposits were observed on injector nozzles operating on kerosene produced by cracking. At 157°, the deposits accumulate to the point where the nozzle valves stick. The mixture of 30% kerosene produced by cracking and 70% hydraulically filtered fuel is not as susceptible to deposit as is pure kerosene produced by cracking, however, one needle did malfunction at 145°C and stuck at 157°C. Poorer performance was observed for fuel injectors functioning on kerosene produced by cracking which is added to diesel fuel at the Saratov Petroleum Processing Plant. Test results for this type of kerosene show that varnish formed on the injector nozzles to such an extent that a force of 11.0-12.1 kg was required to free them. Although performance of this fuel fraction is still poorer at higher temperatures, even 30% kerosene content in hydraulically filtered fuel has the same effect on valve sticking as

ACC NR: AP6034378

pure kerosene. This brings out an important question. Is it at all economically and otherwise efficient to add thermal cracking products as components to diesel fuels which are to be used in fuel injection engines? Orig. art. has: 1 figure, 3 tables.

SUB CODE: 07, 21/ SUBM DATE: None/ ORIG REF: 002

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ENGLIN, M. A., SOBOROVSKIY, L. Z. and ZINOV'YEV, Yu. M.

"Formation of the Phosphorus-Carbon Bond in the Coupled Reaction of Hydrocarbons, Phosphorus Trichloride, and Oxygen", Dokl AN SSSR, Vol. LXVII, No. 2, pp 293-295, 1949.

Translation -W-16087, 3 Jan 1951

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S/079/60/030/007/035/039/XX
B001/B066

11.2130

AUTHORS: Englin, M. A., Makarov, S. P., Dubov, S. S., Krasnousov, L. A., and Yakubovich, A. Ya.

TITLE: Fluorination of the Complex of Acetonitrile With Boron Trifluoride

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2371-2374

TEXT: On the basis of Refs. 1-5, the above reaction was carried out with dilute fluorine in a copper reaction vessel at room temperature. NF_3, CH_3CF_3, CHF_2CN, and two new products were separated by distillation (one of them boiled at -25-24.5°C, the other at -4.8-4.7°C) in addition to a considerable quantity of unchanged acetonitrile. The first product, a colorless gas, is completely decomposed by alcoholic alkali lye, does not separate any iodine from alcoholic potassium iodide solution, is easily soluble in organic solvents and difficultly in water. Its elementary composition and molecular weight correspond to the formula $C_2H_2NF_3$. Its structure, which is probably due to the fluorination of acetonitrile, can be possibly represented by

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the isomeric formulas (I), (II), (III):

$CH_2=CFNF_2$, $CH_2FCF=NF$,  (III).

(I) (II)

To confirm the structure of this product its infrared spectrum was examined. There is a band characteristic of the C-H bond. One band group is caused by vibrations of the C-F bond. An intense band may be assigned to stretching vibrations of the N-F bond. These results and further spectroscopic data (Ref. 6) indicated that the structures (I) and (II) of the product $C_2H_2NF_3$ are not confirmed spectroscopically, which fact speaks in favor of formula (III). This assumption is also supported by the presence of two bands in the infrared, which may be regarded as deformation vibrations of a three-membered ring. The structure of the products discussed may be that of fluorinated ethylene imine. The second product with the molecular weight 117 does not decolorize the aqueous-alkaline $KMnO_4$ solution. Its molecular weight and elementary composition correspond to the formula $C_2H_3NF_4$. In its infrared spectrum there are absorption bands which may be assigned to the N-F and C-H bonds, and a band group appears which is due to C-F vibrations. All these properties indicate

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that the structure suggested for the product is that of α,α,N,N-tetrafluoro ethyl amine. On fluorination of the complex $CH_3CN \cdot BF_3$ with elementary fluorine, 36% of acetonitrile remains unchanged. The yields of the fluorination products referred to the initial acetonitrile are the following: for NF_3 - 6.5%, CH_3CF_3 - 5%, CH_2CF_2NF - 3%, $CH_3CF_2NF_2NF_2$ - 2.5%, CHF_2CN - 1%. There are 12 references: 1 Soviet, 7 US, 3 British, 3 German, 1 French, and 1 Belgian.

SUBMITTED: July 1, 1959

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S/079/60/030/007/036/039/XX
B001/B066

AUTHORS: Yakubovich, A. Ya., Englin, M. A., and Makarov, S. P.

TITLE: Fluorination of Silver and Potassium Cyanates

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2374-2377

TEXT: The authors describe the heterogeneous fluorination of silver and potassium cyanates. The initial cyanate was mixed with calcium fluoride and treated with elementary fluorine diluted with nitrogen at 25-55°C. The fluorination of silver cyanate gives carbonyl fluoride COF_2 (72%) and carbonic acid (24.5%). No nitrogen-containing products were detected, which may be due to the conversion of cyano-nitride to elementary nitrogen; it was difficult to confirm the presence of the latter because of the considerable dilution of the initial fluorine with nitrogen. Silver cyanate is quantitatively converted to silver difluoride. On fluorination of potassium cyanate, trifluoro methyl-hypofluorite, CF_3OF (80%), and nitrogen trifluoride, NF_3 (60%), were separated in addition to potassium fluoride and small quantities of carbonic acid and carbonyl fluoride. The expected

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hypofluorite FOCN could not be detected in the fluorination products, which may be explained by a further fluorination on the C≡N bonds according to the formula $MeOC{\equiv}N \xrightarrow{F_2} [FOC{\equiv}N] \xrightarrow{F_2} [FOCF_2NF_2] \xrightarrow{F_2} FOCF_3 + NF_3$. This formula is in accordance with the fluorination of potassium cyanate, but not with that of silver cyanate. Thus, another formula had to be found for the fluorination of the cyanates. The authors have previously found that in the heterogeneous fluorination of the complex /$CH_3CN \cdot BF_3$/ fluorine adds chiefly to the C≡N bond to form $CH_3CF_2NF_2$ (Ref. 9). Therefore, the above fluorination takes place presumably according to the formula $MeOC{\equiv}N \xrightarrow{F_2} [MeOCF_2NF_2] \xrightarrow{F_2} [MeOCF_3] + [NF_2]$. As a result of further conversion of the trifluoro-methylate of the metal, which is formed as an intermediate, carbonyl fluoride or trifluoro methyl-hypofluorite may be formed. There are 12 references: 2 Soviet, 12 US, and 3 German.

SUBMITTED: July 1, 1959

MAKAROV, S.P.; YAKUBOVICH, A.Ya.; GINSBURG, V.A.; FILATOV, A.S.; ENGLIN, M.A.; PRIVEZENTSEVA, N.F.; PRIVEZENTSEVA, N.F.; NIKIFOROVA, T.Ya.

Reactions of polyfuorinated nitrosoalkanes with amines. Dokl. AN SSSR 141 no.2:357-360 N '61. (MIRA 14:11)

1. Predstavleno akademikami I.L.Knunyantsem i M.I.Kabachnikom.
(Nitroso compounds) (Amines)

ENGLIN, M.A.; YAKUBOVICH, A.Ya.; MAKAROV, S.P.; NIKIFOROVA, T.Ya.; LYSENKO, V.V.; DUBOV, S.S.

Heterogeneous fluorination with elementary fluorine. Part 7: Fluorination of hydrochlorides of aliphatic amines. Zhur. ob. khim. 35 no.7:1167-1171 Jl '65. (MIRA 18:8)

ENGLIN, M.A.; MAKAROV, S.P.; DUBOV, S.S.; YAKUBOVICH, A.Ya.

Heterogeneous fluorination by elementary fluorine. Part 5: Fluorination of silver and potassium thiocyanates. Zhur. ob. khim. 35 no.8:1412-1415 Ag '65.

Heterogeneous fluorination by elementary fluorine. Part 6: Fluorination of cyanuric chloride. Ibid.:1416-1418

(MIRA 18:8)

L 32643-66 EWT(m)/EWP(j)/T WW/JW/RM

ACC NR: AP6015613 (A) SOURCE CODE: UR/0020/66/168/002/0344/0347

AUTHORS: Makarov, S. P.; Englin, M. A.; Videyko, A. F.; Tobolin, V. A.; Dubov, S. S.

ORG: none

TITLE: Reactions of hexafluorodimethylnitroxide

SOURCE: AN SSSR. Doklady, v. 168, no. 2, 1966, 344-347

TOPIC TAGS: chemical reaction, halogen oxygen nitrogen compound, fluorinated organic compound

ABSTRACT: Reactions of hexafluorodimethylnitroxide (I), which was described in an earlier paper by S. P. Makarov, A. Ya. Yakubovitch i dr. (Zhurn. Vsesoyuzn. khim. obshch. im. D. I. Mendeleyeva, no. 1, 106, 1965; DAN, 160, 1319, 1965), with ethylene, tetrafluoroethylene, acetylene, benzene, tetrafluorohydrazine, phosphorus trichloride and trifluoride, lead and tin are described. Photolysis and pyrolysis of I were also investigated. The structure of the reaction products was analyzed by means of elementary analysis, mass spectroscopy, determination of molecular weight, and by formation of derivatives. It was established that in some reactions I acts as a typical free radical, while in others as an oxidizing agent releasing its oxygen. Photolysis leads to dimerization of I, while pyrolysis at 350C results in

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decomposition (I is stable at temperatures up to 200C). The authors express their gratitude to F. N. Chelobov and A. M. Khokhlov for mass spectrophotometric study of some compounds. This paper was presented by Academician I. L. Knunyants on 29 September 1965. Orig. art. has: 1 table and 17 equations.

SUB CODE: 07/ SUBM DATE: 24Sep65/ ORIG REF: 003/ OTH REF: 001

Card 2/2

ENGLIN, N.I., inzh; ZHDANOV, V.L., inzh.

New equipment for making circular reinforced concrete liners for vertical shafts. Shakht. stroi. 5 no.5:20-23 My '61. (MIRA 14:6)

1. TSNIIpodzemshakhtostroy.
(Mine timbering) (Precast concrete)

ENGLIN, N.I.; GRINEVICH, L.V.

Water proofing of structures with bitumen-latex coatings. Biul.-tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 16 no.7:16-17 '63. (MIRA 16:8)

(Waterproofing)

ENGLIN, N.I., inzh.; GRINEVICH, L.V., inzh.

Waterproofing structures with bitumen and latex coverings. Gidr. stroi. 34 no.11:15-18 N '63. (MIRA 17:3)

ENGLIN, R. 27-12-8/27

AUTHOR: Englin, R., Instructor of Trade School # 13, Leningrad

TITLE: Graduation Examination Works (Vypusknyye ekzamenatsionnyye raboty)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, 1957, # 12, p 11-12 (USSR)

ABSTRACT: The article deals with the school's graduation examinations which consisted of 57 different tasks used in previous years. The author points out that under the existing conditions it is almost impossible to give the apprentice-shipbuilders individual tasks since the entire work is performed by teams. Yet, a part of the work is separated as an individual exercise. The socalled "general" themes were abandoned. Tasks on assembling different parts of a ship were elaborated on, for example "assembling the cross bulkhead at the 84th rib", "assembling the deck within the 50-62nd rib", etc. The task requires the manufacture of a model, a sketch and a description. A plan of the particular ship section is handed out to the student with the task. The description has to be prepared on 18-20 pages of a copybook. The apprentice needs 3-4 days

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